U-937) have been investigated in regard to their capacity to predict the sensitization potential of a panel of strong to weak sensitizers. Cells were treated 24 h with the sensitizers and collected for analysis.

Expression of several markers (CD86, CD54, IL-1beta, IL-8) was monitored at the protein (flow cytometry) and/or at the mRNA (Q-PCR) level.

Our data show that despite differences all models are comparably responsive to sensitizers. The data presented are also compared with those generated with the MUTZ-3-DC (differentiated MUTZ-3) model.

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T44
Toxicological in vivo studies of an oral insulin nanosystem

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Attempts at replicating physiological insulin secretion have become an essential feature of insulin treatment. One approach for oral formulations of insulin has been developed in order to combine the drug with safe, easily processed and biodegradable polymers. The purpose of the study is to evaluate toxicological effects of this nanosystem—polymeric nanoparticles. Nanosystem consists of alginate-dextran core complexed with chitosan-polyethylene glycol-albumin shell.

Toxicological studies were performed after oral administration of insulin nanoparticles during 15 days using streptozotocin-induced diabetic male *Wistar* rats. Animals were randomized in four groups: control group I (water), control group II (non-encapsulated insulin), control group III (unloaded nanoparticles) and animals with oral insulin-loaded nanoparticles (50 IU/kg). Histological, haematological and biochemical analysis were evaluated.

In group of animals with insulin-loaded nanoparticles, factors such as aspartate aminotransaminase and alanine transaminase were lower than control groups. in all groups. In case of alkaline phosphatase, animals with insulin-loaded nanoparticles had lower value suggesting absence of liver cells damage or biliary obstruction. No toxicity was detected in haematological parameters. In the last group, glicosuria was also lower than control groups. In addition, cetonic bodies were positive in control group II. Histology of collected animal tissues and organs did not demonstrated toxicity after 15 days of treatment.

This study demonstrates that insulin orally administered within complex of natural biodegradable polymeric nanoparticles did not verified toxicological effects and, in some cases, it had a benefit effect especially on biochemical parameters.

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T45
Paradoxical effects at the chronic exposure of some plant growth regulators (derivatives of the oxide-*N*-pyridine) on the *Tetrahymena pyriformis* W.

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The absence of dependence of "dose-time-effect", display of nonlinear "paradoxical" effects is characteristic for many chemicals, including for the regulators of growth of plants (RGR). In this connection, the infusoria of *Tetrahymena pyriformis* W. are used for prediction of nonlinear toxic effects of RGR (oxide-*N*-pyridine derivatives) The chronic toxicity of RGR on growth of a population *T. pyriformis* W. was studied in concentrations 10^{-2} to 10^{-28} M in lag-phase (24 h), in the logarithmic (48 h) and stationary phase of growth (72–96 h).

It is established, the most expressed changes of the effect direction (stimulation or inhibition of growth) are exposed at the action of di(*N*-oxide-2-methylpyridine)Zn(II)Cl_2. The magnitude of population of infusoria was significantly increased in a lag-phase in concentrations 10^{-4}, 10^{-6}, 10^{-10} to 10^{-20} M, in a stationary phase in 10^{-4}, 10^{-12}, 10^{-14}, 10^{-22}, 10^{-24} M, and significant decreased in a lag-phase in a concentration 10^{-26} M, in the logarithmic phase in 10^{-4} to 10^{-26} M, in the stationary phase of growth in 10^{-6}, 10^{-8}, 10^{-16} M.

2,6-Dimethyl-*N*-oxidepyridine, aqua-*N*-oxide-2-methylpyridine-manganese-2-chloride, di(*N*-oxide-2-methylpyridine)Zn(II)I_2 and *N*-oxide-2-methylpyridine had